

# Perceptions of Equine-Assisted Activities and Therapies by Parents and Children With Spinal Muscular Atrophy

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**Purpose:** To identify the physical and psychosocial effects of equine-assisted activities and therapies (EAATs) on children with spinal muscular atrophy (SMA) from the perspective of the children and their parents. **Methods:** The families of all eligible children with SMA, who reported participation in EAAT, from a Western metropolitan academic center were contacted and invited to participate. This study implemented qualitative, semistructured interviews of children with SMA and their parents. **Results:** Three themes emerged from the qualitative content analysis: physical/psychosocial benefits; relationship development with the horses, instructors, and children; and barriers to continued EAAT engagement. **Conclusions:** The data suggest that the overall EAAT experience was a source of enjoyment, self-confidence, and normalcy for the children with SMA. The results of this study provide preliminary support for the use of EAAT among children with SMA. (*Pediatr Phys Ther* 2014;26:237–244) **Key words:** adolescent, child, equine-assisted therapy, parents, qualitative research, spinal muscular atrophy

## INTRODUCTION AND PURPOSE

Equine-assisted activities and therapy (EAAT) is an all-encompassing term for the various equine-related activ-

ities and therapies for individuals with disabilities. EAAT includes adaptive riding (AR) and hippotherapy (HT). The American Hippotherapy Association (AHA) defines *hippotherapy* as a dynamic intervention program using the multidimensional characteristics of the horse.<sup>1</sup> The horse serves as a base of support, while providing repetitive, rhythmic, and variable movement interventions. The equine experience addresses sensory integration skills through tactile, vestibular, and proprioceptive sensational interventions. Hippotherapy sessions have been demonstrated in certain circumstances to improve coordination, response timing, attention, and respiratory control.

Hippotherapy is related to, but different from AR, which is synonymous with therapeutic horseback riding. Typically AR does not contain therapeutic rigor incorporated in HT sessions via the use of physical, occupational, or speech therapists.<sup>1,2</sup> EAAT (including AR/HT) is distinct from recreational riding or riding for sport, as the primary aim for EAAT is therapeutic (not recreational).<sup>3,4</sup>

The majority of the published literature on this topic investigates the effects of HT on children with cerebral palsy (CP). Previous reports suggest that in children with

0898-5669/110/2602-0237

Pediatric Physical Therapy

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**Grant Support:** This investigation was supported by NIH grant R01-HD054599 from the National Institutes of Child Health and Human Development to K.J.S., and by UL1RR025764 (University of Utah Center for Clinical and Translational Sciences).

This work was completed while Danielle Lemke, MS, was obtaining her Master of Genetic Counseling degree at the University of Utah, Salt Lake City. The University of Utah Graduate Program in Genetic Counseling, Department of Medical Genetics, School of Medicine provided financial support for this research project.

The authors declare no conflict of interest.

DOI: 10.1097/PEP.0000000000000027

CP, HT facilitates improved motor learning and carry-over of motor ability to motor activities off the horse.<sup>5</sup> Children who received weekly rhythmic horse movement demonstrated increased motor control of their head and trunk for 3 months post-HT,<sup>6</sup> and 10 minutes of HT significantly improved symmetry of adductor muscle activity during walking compared with a group of children with spastic CP who sat on a barrel for 10 minutes.<sup>7</sup> Authors of 2 recent meta-analyses concluded that HT has positive effects on gross motor function and improves postural control and balance in children with CP.<sup>8,9</sup> Other studies of children with muscle deficits have demonstrated improvements in balance and muscle symmetry,<sup>10</sup> especially of the trunk and hip,<sup>11</sup> as well as increased gross motor function.<sup>11,12</sup> Individuals with Down syndrome demonstrated improvements in motor skills (specifically walking, running, and jumping) from HT participation.<sup>13</sup> Improvements in respiration, speech and language, and heightened motivation and compliance have also been reported.<sup>10</sup>

In individuals with multiple sclerosis, HT has been demonstrated to reduce pain and muscle tension measurements, as well as improve balance and quality of life.<sup>4</sup> Increased balance and performance of daily life skills were also confirmed in a study investigating HT and children with various conditions that include balance deficits.<sup>14</sup> Hippotherapy has been reported to improve quality of life in children with CP and in grieving children, which included factors such as an increased sense of achievement, self-esteem, confidence, and motivation,<sup>15</sup> as well as trust and communications skills.<sup>16</sup>

Finally, interviewed physiotherapists reported that HT improved trunk control, increased muscle tone, and motivation (influencing a positive effect on motor learning ability), and was a holistic intervention approach for individuals with CP.<sup>17</sup> Overall, the bulk of the published literature favors the opinion that HT appears to be an efficacious, medically indicated therapy for gross motor rehabilitation in children with a wide range of disabilities.<sup>5</sup>

However, debate continues regarding the effectiveness of HT programs with regard to their specific effect on outcomes, their use in conjunction with other available therapies, and their relatively recent appearance in the United States with limited research on children with varying disabilities. To our knowledge, no research study has investigated the effect of HT on children with spinal muscular atrophy (SMA). The effects of HT for individuals with CP may be comparable in some ways to individuals with SMA because of the common neuromuscular manifestations inherent in the conditions including muscle weakness (especially trunk, hip, and head), joint contractures, decreased balance/postural control, and limited gross motor mobility, although this remains unproven at present.

Spinal muscular atrophy is characterized by progressive degeneration of the motor neurons of the anterior horn of the spinal cord and lower brain stem, causing progressive muscular atrophy and weakness. Features of SMA include scoliosis, joint contractures, respiratory muscle weakness resulting in pneumonia, poor weight gain,

paralysis, and even death.<sup>18,19</sup> Spinal muscular atrophy is categorized into several subtypes on the basis of age of onset and maximum achieved gross motor function (Table 1).<sup>19-24</sup>

The purpose of this study was to determine the physical and psychosocial effects of EAAT on children with SMA (type II and type III) through qualitative interviews. The primary aims of the study were to identify the perceived benefits and limitations for SMA research participants who participate in EAAT from the child's perspective and from the parents' perspective.

## METHODS

The Institutional Review Board at a metropolitan academic medical center in the western United States approved this study. The target population consisted of all individuals with SMA followed at this center who were within the age range of 4 to 15 years, have SMA type II or III, and who indicated that they were participating or had participated in HT or an AR program at some point during the course of clinical follow-up. The sampling strategy included conducting a search within the medical record database, for those who indicated at some point on their medical history forms HT/AR participation and fell within the age range. A total of 40 eligible study participants were identified and invited to participate in this research.

One member of the research team determined if eligible study participants were scheduled to attend clinic. The parent-child dyads were approached prior to their appointment and asked whether they would participate in the research. Three dyads were recruited and interviewed face-to-face through this method of recruitment. Because of the low frequency of potential participants attending clinic during the short recruitment period, a second method of recruitment was used that involved e-mailed letters. An initial invitation to participate in the research, along with attached consent, assent, and parent-permission forms, were sent to 33 potential participants with available e-mail addresses. We conducted 8 dyad and 1 triad interviews over the telephone. Comparison of interviews conducted by phone or in person shows no significant difference in completion rates, participant characteristics, or quality or type of data.<sup>25,26</sup>

The parent interview duration was approximately 30 minutes and was conducted first, without the child present. The child interviews were conducted next, with the parent

**TABLE 1**  
Spinal Muscular Atrophy Subtype Classification

Type	Onset	Ventilator-Free Life Expectancy	Classification	SMN2 Copies
0	Prenatal	"neonatal period"	Most severe	1-2
I	<6 mo	< 2 y	↓	1-3
II	6-18 mo	> 2 y		1-4
III	> 18 mo	"normal"		≥2-5
IV	≈30 yrs	"normal"		Least severe ≥2-5

present, and lasted about 15 minutes. A semistructured interview guide modified from the research by Debusse et al,<sup>15</sup> to address study participants with SMA, with input from the research team, was used.

## Data Analysis

We analyzed the data, using qualitative content analysis.<sup>27</sup> Codes were generated from the data by careful readings of the transcripts and the semistructured interview guide. One member of the research team read and re-read the transcripts for the initial development of the codes. The codes were then reviewed and refined with another member of the research team. The codes were systematically applied to the transcripts with the ability to add additional codes that may have been missed during the development of the codebook. The codes were linked together until all of the data fell into distinct categories.

The codes also provided a measure of statement frequencies and were used to help identify prominent themes among the parent and child groups. Less frequently occurring codes were collapsed into the more prominent codes within each of the main categories. The second component and most time-intensive part of the analyses involved reviewing the transcripts and assessing the context of the codes for detailed descriptions as to why the statements were made.<sup>28</sup> In addition, the children's and parents' transcripts were analyzed separately and these data were compared between (and within) the groups.

We addressed trustworthiness and rigor of the data to maintain data integrity during the analysis through methods of credibility and auditability.<sup>29-32</sup> Upon completion of the coding, all coded data were queried and reviewed by the research team. This allowed us to review, verify, and audit the coding template and associated data. ATLAS.ti computer software was used to help analyze, retrieve, and review all coded data.<sup>33</sup> We followed the qualitative research approach of reflexivity to minimize the influence of our own beliefs on the data analysis<sup>34</sup> by (1) designing the research questions to be unbiased and open-ended, (2) independently coding and grouping the interview data into distinct themes, and then (3) comparing the generated codes and categories between researchers to obtain the agreed-upon categories.

## RESULTS

A total of 13 children and 12 parents were interviewed (11 parent-child dyads and 1 triad consisting of 2 children with SMA and 1 parent). Table 2 provides participants' demographics. Saturation, determined when no new themes or ideas emerged from the data, was noted at the 6th dyad transcript, but all transcripts were coded and included in the analysis. Three key themes emerged from the data analysis: (1) benefits, (2) relationships, and (3) barriers. The themes are distinct but related. Each theme is described by using direct quotes from the interviews to encompass the range of responses. The findings regarding each theme are

**TABLE 2**  
Participant Demographics

Study Group	Males	Females	Age Bins, y	Age Frequency	Race	Total
Children	7	6	4-6	5	White; non-Hispanic/ Latino	13
			7-9	3		
			10-12	3		
			13-15	2		
Parents	0	12	25-29	1	White; non-Hispanic/ Latino	12
			30-34	2		
			35-39	4		
			40-44	2		
			45-49	2		
			Unknown	1		
Total						25

presented in conjunction between the paired child and parent dyads to demonstrate the similarities and differences between the 2 groups. Table 3 summarizes the various EAAT experiences for the study participants, which may be helpful in providing context of the qualitative results presented.

This research was conducted via participant-report; thus, the actual classification of equine-intervention that the child underwent was not verified. For the purposes of this research, the participants' equine-interventions are referred to as EAAT, which encompass HT and AR experiences.

## Benefits of Participating in EAAT

The perceived benefits of EAAT were the most frequent occurring code in the data analysis. The benefits discussed by the children were summarized into 2 main categories: psychological and physical. The psychological benefits of participating in EAAT included improved mood, confidence, self-esteem, pride, independence, and sense of achievement. Some quotes demonstrated psychosocial benefits: "When I got up on the horse I could do everything once I got up. I think it gave me independence." (a 15-year-old girl); "I'm always in a good mood when riding the horse." (an 11-year-old boy). The EAAT experience also provided the participants with a sense of accomplishment and normalcy, which was something that they often shared in common with their peers: "It was really fun. And it was cool to go back the next day at school and be like, 'Hey, guys, I just rode a horse.'" and "It gave me something to talk about with my friends." (a 13-year-old girl).

All of the children described EAAT in a positive light. The differing gaits (ie, trotting, walking) were perceived as enjoyable and fun. One 5-year-old boy adamantly stated, "[I continue to ride horses] because I like it." Several of the older children who were nonambulatory compared the equine movement to what walking might feel like, and all of the children indicated that they would continue participating in EAAT if given the opportunity. One 13-year-old girl, who is nonambulatory, described her

**TABLE 3**

Equine-Assisted Activities and Therapies Experiences by Quote Frequency

Experience Category	Subcategories	Quote Frequency	Quote Total
EAAT exposure	Word-of-mouth	13	25
	Independently searched	4	
	Recommended by a PT	6	
	Occupation (parent a PT)	2	
Time from diagnosis to enrolling	Less than 1 y	7	13
	1-2 y	2	
	More than 2 y	4	
Length of session time	30-45 min	6	13
	45-60 min	5	
	Over 60 min	2	
Length of EAAT participation	Less than 2 y	1	13
	2-5 y	9	
	Over 5 y	3	
Weekly sessions	One/week	11	13
	Two/week	2	
Climate influence	Limited by cold	2	9
	Limited by heat	2	
	Seasonal riding	5	
Reasons to discontinue EAAT	Surgery/contraindicated	3	8
	Child size	1	
	Access (time/travel/facility)	3	
	Financial	1	
Difference when discontinued	Increase muscle function	8	18
	Increase psychological function	1	
	No difference	9	

Abbreviation: EAAT, equine-assisted activities and therapies; PT, physical therapist.

experience as follows: “I felt the beat of the horse, because I don’t weight-bear at all, so it was different. It was a very awesome feeling. I really enjoyed it. It was good. I mean, it is a lot of work . . . but it was good.”

The children perceived a range of physical benefits including increased flexibility, muscle laxity, muscle function, core strength, balance, and a feeling that they were exercising. The children described increased muscle function in the core muscles and muscles and joints of the upper and lower extremities. Some quotes in this category included “I have tight muscles and so it helps me.” (a 7-year-old girl); and “During the trotting, I had to really keep my tummy muscles [tight] . . . It helps make my muscles more active.” (an 11-year-old boy). The children reported that these physical effects carried over into daily activities off the horse, including walking (in some cases), lifting objects, and general positioning, such as “It makes my muscles stronger so I can put my chair up [at school] when we’re going home.” (an 11-year-old boy); and “It helps me spread my hips out when I’m on my bed.” (a 12-year-old boy). A few of the older children were also able to conceptualize a perceived cost/benefit physiological relationship between initial negatives of participating

in EAAT corresponding to long-term physical benefits, as a 13-year-old girl explained: “Well when I’d get off, I felt that my hips especially would be really sore and stuff, but that’s what you get when you get a good stretch.”

The parents also perceived benefits for their participating children that were both psychological and physical. They reported increased confidence, independence, and a sense of achievement and/or overall well-being. One parent of a 5-year-old boy proudly stated: “For a kid that’s in a wheelchair all the time, it gives them this wonderful feeling of being up high. I think it gives them a little bit of confidence.” Furthermore, parents perceived these effects as extending beyond the EAAT experience into daily functioning. They described improved social interactions, a sense of accomplishment and pride, and increased self-esteem when off the horse. A quote demonstrating this is from a mother of a 9-year-old boy:

I mean these kids spend so much of their time in hospitals and in a clinical setting, to actually be able to be outside or be in a corral, be doing something that is so different, I just think it helps them emotionally and to give them that little bit of normalcy something that other kids possibly would be doing, like horseback riding. I think it’s highly beneficial for them.

The parents also reported that AR seemed to help their children develop a sense of sportsmanship. One parent of an 11-year-old boy explained, “He does 3 competitions a year. That’s another benefit of it; it is a sport for him. He can’t run, but when the horse trots, he feels like he’s running, like he loves that part.” One parent humorously explained the sportsmanship lesson learned by her 11-year-old son: “They started bumping him up to the higher class [in competition], and he stopped getting the blue ribbons. He wouldn’t even take the ribbon the first time that he went. They taught [him] manners and sportsmanship.” Another parent explained the experience for her teenaged girls: “I know that it was a fun time for them to be able to do it and feel very in control; they felt very empowered. With definitely the physical things, but I think it was more the mental, feeling really strong and it felt good for them.”

Parents also described physical benefits for their child participating in EAAT, including improvements in strength and balance: “I think he’s stronger. It helps him with balance and strength,” a mother of an 8-year-old explained; and “I think she’s gotten better balance and I think she’s able to maintain and gain more strength than she ever had,” a parent of a 7-year-old confidently stated. Other physical benefits perceived by the parents included stabilization or improvement in motor function, postural control, and gait stability. All parents stressed the unique benefits of EAAT, indicating that the type of exercise and range of motion provided by EAAT was quite unique from what is available via other types of therapies. One parent of a 12-year-old boy explained her opinion of EAAT: “The physical benefit you get out of it is something different than you can get out of any medical model therapy. Even swimming, because we swim too. You can’t duplicate it.

I can't duplicate what the horse did anywhere else." The parent with teenaged girls, aged 13 and 15 years, explained 1 of the daughters' experiences:

You could tell that she had ridden because she was a lot more loose, because she has contractures and trying to at least maintain or improve some trunk control and head control. The sensation of what walking feels like, that was important for [younger daughter's name], cause she never really got that feeling except on a horse, and that was something that really felt good to her.

A physical benefit that seemed surprising to some parents was an observed increase in their child's breath and voice control as a result of EAAT participation. One parent of a 5-year-old boy explained what she has noticed in her son: "We've seen a great improvement in [his core strength and breath control]. It definitely works his muscles in a way that we can't repeat through a different process."

### Relationships Formed During Participation in EAAT

Another perceived benefit was the opportunity for the child to form relationships. Children reported relationships with (1) the horse, (2) the instructor/therapist, and (3) other children. The child participants mentioned the relationship with the horse most frequently. The younger children focused on the attractiveness and the emotional connection with the horse. For example, one 7-year-old girl shared the following: "Do you know [horse's name] is very sassy? She gets grumpy. That's the one thing I don't like about her, but I still love her to pieces. Do you know who's the most cooperative and listens always? [Horse's name]." Children perceived the opportunity to build relationships with other children as an important benefit. These included friendships made during the EAAT experience or outside EAAT. One 11-year-old boy stated: "There's a friend of mine who goes to horseback riding." Finally, children also perceived their relationships with the instructor/therapist or side-walkers in a positive light, and often spoke of past as well as current instructors/therapists by name; "Okay, well, Miss [name] is my teacher. [She] is way nice" (a 7-year-old girl). A 13-year-old girl explained the comfortable feelings she had with her instructor/therapist: "We had the same instructor every time, which was really cool. We had girls and guys that volunteered. They all seemed willing to help us and wanting to be there with us."

From the parents' perspective, the child's relationship with the horse was the most influential relationship for their children. One parent explained her child's experience: "They feel so attached to the horses that they ride, just the emotional part of seeing the horse and knowing that after they're done riding, they get to go back into the barn and give the horse the treat, and it's just so much fun for them, they love it" (parent of a 4-year-old girl). Another parent stated: "He had the same horse every time

and so he always talked about [horse's name] and when the session was over he would always pet [horse's name]. Yes, definitely a relationship there" (parent of a 5-year-old boy). The parents also stressed the perceived benefit of the child's relationship with the instructor/therapists and side-walkers as a dynamic team. One parent of a 5-year-old boy commented:

He always develops close relationships with some of the college kids that we saw week after week. We would have them for one semester at a time and there would be particular ones that were really drawn to him, they would ask to be with him each time. He likes that a lot and I think they did too.

The parents reported that the continual interactions with the instructor/therapists or side-walkers facilitated communication skills. In addition, a few parents explained that the instructors/therapists and side-walkers changed frequently (as well as the horse, in some instances), which they perceived as a benefit for the child to learn to adapt to new situations and interactions. One parent of a 5-year-old boy explained:

He has a very good relationship with the coach. For him, he always had the same person that's the lead, the hippotherapist [*sic*], but then there's always a new volunteer. So it's good that it has both consistency in the person that's working with him, but then he also has to adapt to the new volunteer who's walking with him that day . . . . It's been a good social outlet for him.

### Barriers to Obtaining EAAT

The third categorical theme that emerged was composed of barriers encountered by parents and children in obtaining or continuing EAAT. Children were sometimes apprehensive about beginning EAAT, describing an initial feeling of nervousness or intimidation by the horse ("When I first starting riding horses, I was nervous"—an 11-year-old boy). However, all of the children who initially reported apprehension went on to report that they were able to overcome this barrier ("At first I was [scared of the horses], but then I got used to it."—an 8-year-old boy proudly stated). Most children noted, at least initially, some negative physical consequences of participating in EAAT, such as muscle soreness. A 12-year-old boy stated: "My hips hurt afterwards. They would hurt at first but then they wouldn't" and "Sometimes my legs would get sore because I had to kick my horse for it to go, but besides that it was fine" (a 15-year-old girl).

Barriers described by parents included (1) negative psychological and physical events; (2) physical changes in the child that contraindicated EAAT participation; and extenuating circumstances, such as (3) lack of EAAT knowledge by providers; and (4) issues regarding cost or lack of insurance coverage. Parents worried about the safety of their children and relayed their concerns about potential physical injury or discomfort. One parent of a 12-year-old boy explained her concerns, "For [him], it got where he

was just so big, to get off and on the horse, I felt like it wasn't safe for me to do with him." A parent of an 11-year-old boy explained her concerns with some added humor, "He has fallen off a couple of times, he's never been injured, and when he fell, it's been kind of kooky when it's happened. You know, you need to learn how to deal with pain." The parents were also concerned about upsetting the children if/when they were no longer able to participate because of medical contraindications. The contraindications most commonly reported for discontinued participation in EAAT were surgeries, scoliosis related surgery, or declining physical ability (such as progressive muscle weakness resulting in diminished head and trunk control). The contraindications were described by parents: "Well, [he] had the rods placed, and so it's contraindicated once you have any kind of rods placed." (parent of a 12-year-old boy), and "There were times, especially after surgeries that they just weren't able to ride and I really don't know if [she] will ever be able to get back on again because of her fusion" (parent of teenaged girls aged 13 and 15 years).

The majority of the parents reported searching out EAAT on their own, without a referral from a medical professional. The parents and children strongly advocated that providers become more aware of EAAT as a potential therapy intervention and mention it to families with children with neuromuscular manifestations. One parent of an 11-year-old boy stated with a frustrated tone, "Actually, I'm the one that brought it up to my physical therapist. They didn't know this was in our area. I don't think you can really rely on the doctors because they don't seem to even know anything about SMA." Another parent of a 4-year-old girl advocated for the benefits of the horse and awareness of EAAT: "I think if people were more aware of it and the benefits of it, they would do more of it. I don't think a lot of people understand just the depth that horseback riding can do for a child."

Another barrier discussed by the parents was the expense of EAAT due to the lack of insurance coverage. The majority of parents reported that they did not have insurance coverage for EAAT. Those who were successful at obtaining insurance coverage either coded EAAT as a subtype of physical therapy or received only partial coverage. A parent of a 4-year-old girl explained their experience with the cost of EAAT: "We pay for it out of pocket. Insurance doesn't pay for recreational therapies, so they will not pay for hippotherapies [sic]."

## DISCUSSION

This study is unique in that it investigates a novel study population (SMA) within the HT/AR field using qualitative methods, as opposed to quantitative (case-control) designs. The study participants supported the use of EAAT through their rich and personal stories conveying their perceived benefits of the EAAT experience. Our findings parallel previous research conclusions that HT/AR provides physical and psychological benefits to its participants.<sup>5-17</sup>

Results from this study support the premise from previous research that HT/AR participation for individuals with muscle or balance deficits may facilitate improvements in muscle function, core strength, coordination, balance, flexibility, motor learning, and carryover of motor activity off the horse.<sup>1,5,6,8,9,13-15,17</sup> The participants' perceptions also support the AHA statement that HT is a complex intervention program offering unique movements, dynamic support, and increased respiratory/voice control.<sup>1</sup>

The study participants' perceived psychological benefits from EAAT participation are both consistent with, and expand upon, previous observations in different study populations that also reported increased self-confidence, efficacy, esteem, and sportsmanship.<sup>15-17</sup> The children with SMA perceived EAAT as an enjoyable and fun therapy that provided a rich social outlet.<sup>35</sup> The special relationship reported between the children and their horses is another major benefit reported previously.<sup>15-17</sup>

As with any research investigation, this study has limitations. Inherent to qualitative research, the threats to validity include response biases. Participants self-enrolled in this study. The study did not include participants who indicated EAAT participation, but ultimately discontinued because of negative experiences (despite repetitive attempts to engage them as study participants). Those who participate in EAAT may have an inherent bias that EAAT is of benefit for the child. Many who discontinued EAAT likely did so because of medical contraindications related to disease progression. Another potential response bias is the parental influence on the children's responses during the interviews, especially the younger children.

Our study did not verify the different types of equine interventions in which the participants engaged, meaning that some participants were involved with established HT, while others participated in AR programs. This may be a limitation due to the different interventions performed in HT versus AR programs. Finally, our research investigated only 1 population, those with SMA; thus, our findings extend previous research but may not be generalizable to other populations.

The perceived physical benefits from EAAT may be, in part, a result of multiple confounding variables that influence the children's motor abilities and self-perception, such as medication use, the age of the child, severity/type of SMA, the rate of disease progression, and the children's participation in other therapies. Other extenuating factors that may have influenced the study participant population include the reality that EAAT is expensive and not readily covered by insurance, which may preclude participation for those of lower socioeconomic status. The location of EAAT programs and feasibility of time and transportation are also factors influencing EAAT participation.

Table 3 summarizes the various EAAT experiences for participants in this study through frequency counts of the number of times that general idea was mentioned throughout the interviews. This same information could have been obtained via a survey method. Frequency counts

may be helpful to quantify the importance of a variable; however, they are not able to capture the depth of feeling about an issue, which is the essence of qualitative research.

We hope that our observations may encourage additional studies to explore the potential benefits of HT/AR in comparison to other available therapeutic interventions. Additional studies to assess the longitudinal effect on quality of life and gross motor function in children who regularly participate versus those who have never participated in HT/AR may be of value in helping facilitate support for HT/AR programs and facilities, as well as enhance the range of options available to our patients.

## CONCLUSION

We used qualitative research methods to examine parent and child perceptions of EAAT participation in children with SMA. All participants reported significant psychological as well as physical benefits. Overall, their comments highlighted several unique features provided by this therapeutic treatment strategy, emphasizing the rich, complex, and positive emotional, social, and physical experiences not readily available in traditional settings. We demonstrated that EAAT has the capacity to enhance quality of life for those incorporating it as part of a proactive treatment strategy targeted to help maintain strength, postural control, and range of motion in children with SMA.

## ACKNOWLEDGMENTS

The authors thank the children with SMA and their parents who so generously donated their time to participate in this study. Appreciation is also extended to the University of Utah Graduate Program in Genetic Counseling for the research funding and Donata Viazzo-Trussell, Kristin Krosschell, and Ben Chism for their assistance and helpful suggestions.

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## CLINICAL BOTTOM LINE

### Commentary on: "Perceptions of Equine-Assisted Activities and Therapies by Parents and Children With Spinal Muscular Atrophy"

#### "How could I apply this information?"

This study describes qualitative feedback provided by children and parents regarding their experiences with equine-assisted therapies and activities (EATA). By describing the benefits, relationships, and barriers faced by the study participants, the authors present actionable issues that can be used by clinicians to maximize the potential therapeutic benefit during the EATA sessions. The study results highlight the important concept of self-efficacy as it relates to motor learning. Improved feelings of self-efficacy, personal beliefs about ability, and related expectations have been supported in many prior studies and are important to incorporate into rehabilitation.<sup>1</sup>

#### "What should I be mindful about in applying this information?"

Expanding on these qualitative results with quantitative metrics of function would further clarify outcomes from EATA and possibly provide insight into mechanisms that support change following EATA. It is important to distinguish between equine-assisted activities that are therapeutic in nature, that is, provided by a licensed physical, occupational, or speech therapist, and those that are recreational in nature.<sup>2</sup> Hippotherapy, provided by a licensed PT, OT, or SLP, should be billed as a therapeutic intervention and therefore address the cost barrier that has been identified. Should the patient not be expected to make functional gains but is interested in equine-assisted activities as a means to improve quality of life, and maintain present functional level of core strength, breathing, and postural control, a recreational program of therapeutic riding could be chosen; however, this may not be supported by insurance or other payers. The importance of improved self-efficacy, or ability to perform functional motor tasks, especially in a child with a disease that is progressive in nature, may be paramount to the individual's quality of life.

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The authors declare no conflict of interest.

DOI: 10.1097/PEP.000000000000028